

### **In The Claims**

Please amend claim 1 as follows:

1.(Amended) In a process for producing a product using a material which is electrochemically loaded with an isotopic fuel, a method of controlling the loading which includes in combination:

loading said isotopic fuel into said material,  
then providing means for producing a change in the quantity of said isotopic fuel within said material,  
creating thereby a catastrophic diffusion flux of said isotopic fuel within said material,  
providing a diffusion barrier to said diffusion flux of said isotopic fuel within said material,  
means thereby producing said product.

Please amend claim 3 as follows:

3. (Amended) A method as in claim 1 wherein said loaded isotopic fuel is a member of the group consisting of deuterium or deuterons.

Please amend claim 4 as follows:

4. (Amended) In a process using an isotopic fuel loaded into a material, a two-stage method for controlling the loading which includes in combination:  
loading said isotopic fuel into said material,  
then providing means for producing a change in the quantity of said isotopic fuel within said material,  
creating thereby a catastrophic diffusion flux of said isotopic fuel within said material.

Please amend claim 6 as follows:

6. (Amended) A method as in claim 4 wherein loaded isotopic fuel is a member of the group consisting of deuterium or deuterons.

Please amend claim 8 as follows:

8. (Amended) A method as in claim 4, where the said means to produce a change in the quantity of said isotopic fuel within said material is by a change in temperature of said material.

Please amend claim 12 as follows:

12. (Amended) A method as in claim 10 wherein said means of removing said product utilizes an applied spatially inhomogeneous magnetic field.

Please amend claim 13 as follows:

13. (Amended) An apparatus to produce a product using a material loaded with an isotopic fuel, which includes in combination:

means to load said isotopic fuel into said material,

means to produce a change in the quantity of said isotopic fuel within said material,

means to produce a catastrophic diffusion flux of said isotopic fuel within said material,

means thereby to produce said product.

Please add claims 21 and 22 as follows:

21. A method as in claim 1, where the additional step is taken of removing said product produced.

22. A method as in claim 21 wherein said means of removing said product utilizes an applied spatially inhomogeneous magnetic field.